Pharmacy Education (2022) 22(2) 184 - 187
https://doi.org/10.46542/pe.2022.222.184187

IAI SPECIAL EDITION

RESEARCH ARTICLE

Prescription of medicine for outpatients of gynaecology obstetric poly at a private hospital in Semarang, Indonesia

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Keywords
OB/GYN poly
Outpatient
Prescribing
Rational drug use

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Abstract

Background: Rational use of drugs means that patients get the right drug, in the right amount, at the right time, and at the lowest price. The World Health Organizaiton (WHO) issued a guide of the main indicators for the rationale assessment of drug use. These indicators are used as the first line in the assessment of drug use. Prescribing indicators are used to see patterns of drug use and can directly describe inappropriate drug use. This is known as the WHO criteria indicator. **Objective:** The purpose of the study was to determine drug prescribing for obsteric gynaecology (OB/GYN) poly outpatients at a private hospital in Semarang in accordance with hospital formulary and pharmacy availability. **Methods:** For this purpose, a descriptive and quantitative survey was conducted. The sample included 251 patients from January 2020. The data were collected retrospectively from the pharmacy's prescriptions. **Results:** The average number of drugs prescribed per visit was 2.45. Antibiotics were prescribed in 5.2% of encounters and injections in 0.2 %. 5.7% of drugs prescribed were generic, and 2.8% were from the hospital's formulary. The Pharmacy Installation had 79.6% drug availability. Mineral multivitamins (51.5%), hormonal drugs (20.9%), and antibiotics were the most commonly prescribed drugs (5.2%). **Conclusion:** On the basis of the finding of this study, this OB/GYN Hospital still needs to improve the appropriateness with WHO criteria so that the drugs prescribed were rational and can be available.

Introduction

Pharmacy services are an inseparable part of a complete hospital healthcare system and are oriented to patient care and the provision of quality drugs. Rational therapy is very important in order to obtain therapeutic outcomes that are in accordance with the purpose of drug administration. Inaccurate drug prescribing is reported to be more common in developing countries (Mishore *et al.*, 2020)

Rational use of drugs means that patients get the right drug, in the right amount, at the right time and at the lowest price. The increasing economic status of the community, the ease of communication and the increased knowledge as a result of national development in all fields have caused the community to demand health services that are more qualified, friendly, cheap and able to meet the needs of the community (World Health Organization, 1993)

In several hospitals in Semarang city, Indonesia, not all prescriptions can be served due to drug vacancies in pharmacy installations. This can reduce patient satisfaction and can cause patient disappointment, both in terms of time and cost, because they still have to look for drugs that are not available (Friska *et al.*, 2019). Measuring the availability of drugs is something that must be done regularly, and ensuring the availability of drugs for patients plays a vital role in health services (Modisakeng *et al.*, 2020).

Aims

This study aims to determine drug prescribing for outpatients in obstetrics and gynaecology polyclinic at

a private hospital in Semarang city, in compliance with the hospital formulary and the availability of drugs at the pharmacy installation.

Methods

This is a descriptive study, and the data are taken retrospectively. Sampling by purposive sampling method, with certain inclusion criteria: that is general patient prescriptions (not-state healthcare) for obstetric gynaecology (OB/GYN) polyclinic patients who redeemed drugs at the Pharmacy Installation of the Hospital in Semarang in January 2020.

Result

In January 2020, there were 251 patient prescription sheets that were redeemed by outpatients at the OB/GYN polyclinic at the pharmacy installation of the private hospital in Semarang, with total drug items of 614 R/. So, there were 2.45 drug items in each prescription. Only 5.7% of prescriptions were generic drugs. There were 17 drug items that were not listed in the Hospital Formulary (2.8%). From the results of the examination of the drug delivery data, it turned out that there were 125 R/ that could not be served when the patients redeemed their drugs at the Pharmacy Installation of the hospital (20.4%). The characteristic of the drugs can be seen in Table I. There were various classes of drugs that were prescribed to patients in the OB/GYN polyclinic; the complete data can be seen in Table II.

Table I: Characteristic of drug prescribed for outpatients at the OB/GYN polyclinic

Total R/ per sheet	Total sheets	Total drug	%
1.	36	36	5.8
2.	100	200	32.57
3.	92	276	44.95
4.	15	60	9.77
5.	6	30	4.89
6.	1	6	0.97
7.	1	7	1.14
Total	**251**	**614**	**100**
Appropriate	With hospital formulary	597	97,23
Not		17	2,77
Generic name		35	5.7
Branded name		579	94.3
Total		**614**	**100**

Table II: Drug classes prescribed for outpatients at the OB/GYN polyclinic

Drug classes	R/ (item)	%
Mineral and vitamins	316	51.47
Hormon	128	20.85
Antibiotic	32	5.21
Analgetic	18	2.93
Antihypertensive	14	2.28
Others	106	17.26

Discussion

There was only one prescription sheet, which was prescribed for six or seven drugs, and the average was 2.45 drug items per prescription. This prescription exceeds the standard set by the WHO, which recommends the average number of drugs per prescription as 1.6 - 1.8 (Bashrahil, 2010). Compared to similar studies at poly OB/GYN hospitals in Saudi Arabia and Pakistan, which averaged 3.3 and 3.4 drug items per prescription, respectively, the average number of drug items in the private hospital was still lower (Agarwal *et al.,*2014; Atif *et al.*, 2016). The more drugs that are prescribed, the greater the costs that must be incurred by the patient to redeem the drug and the greater the risk of both drug side effects and the potential for harmful drug interactions (Desalegn, 2013).

The WHO recommends prescribing 100% of generic drugs because it has been proven to increase cost-effectiveness (Alanazi *et al.*, 2019; Bhartiy *et al*., 2008). The percentage of generic drug use in this study is very little, only 5.7%, the remaining 94.3% are prescription drugs with trademarks from the pharmaceutical industry. A similar study in Saudi Arabia found the use of generic drugs of 41.4% (Karki *et al.*, 2019). The use of generic drugs greatly reduces the burden on patients because the price of generic drugs is much lower than the price of branded drugs (van der Gronde *et al.*, 2017). Drugs with trademarks, even though they contain the same active substances, may have a different price (Frank, 2001). Prescribing drugs with trademarks can be caused by the 'lobby' power of the pharmaceutical industry. In 2018, the pharmaceutical industry in the United States (US) spent approximately 220 million dollars on lobbying; these costs, of course, caused drug prices to be high (Rajkumar, 2020).

Not all prescribed drugs are included in the list of drugs in this study's hospital formulary. A total of 17 R/ (2.8%) prescriptions were from outside the Hospital Formulary. This can cause problems because the patient will not be able to get the medicines from the hospital pharmacy installation. This result is much

better than the study in Saudi Arabia, which found that only 34.3% of the drugs prescribed were listed in the same hospital's formulary (Karki *et al.*, 2019)

Unavailable drugs are a problem that needs to be considered by the hospital management. The detrimental impact of this is a reduced hospital income and the possibility of patient dissatisfaction, which can earn the hospital a bad reputation. Especially in the digital era, patient dissatisfaction can be directly broadcasted through social media. Overall, there were 125 R/ who were not served from the hospital formulary during January 2020 (20.4% of patients). This is similar to the result of a study in Kenya, where there were only 80% of the drugs prescribed available (Rajkumar, 2020). Most of the drugs that are not served are products containing Vitamin E, folic acid and the hormone progesterone. A large number of types and quantities of drugs in hospitals causes the need for effective and efficient drug supply control. Drug shortages that often occur in hospitals are one of the clues that inventory control is not optimal or effective in hospitals (Nyabuti *et al*., 2020). Better SOPs and policies are needed so that the hospital management can maintain the availability of drugs at their pharmacy installation (Iqbal *et al.*, 2017)

Various classes of drugs have been prescribed to patients at the OB/GYN clinic. Vitamin and mineral supplements are the most widely prescribed drug classes (51.5%); this is the same with the studies in Saudi Arabia (Agarwal *et al.*, 2014) and Pakistan (Rohra *et al.*, 2008).

The next most prescribed drug group was the hormone group, and the most widely prescribed was the product containing the active substance Norethisterone. Norethisterone is one of the most effective progesterone hormones in the treatment of endometriosis (Taniguchi *et al*., 2017). This hormone is also widely prescribed in cases of primary and secondary amenorrhea, as well as menstrual timing. The next class of drugs is analgesics. Many prescriptions for analgesics are given to patients after caesarean sections because it is common for women who give birth by cesarean section to still experience postoperative pain (Kintu *et al.*, 2019).

Antihypertensive drugs are also prescribed for some patients in the obstetrician clinic because many pregnant women experience an increase in blood pressure, chronic hypertension, gestational hypertension and pre-eclampsia (Zhao *et al.*, 2014). Increased blood pressure in pregnant women is very dangerous, both for the mother and the fetus. Drugs containing the active substance Methyldopa are the most prescribed in this study. This is in contrast to the 2018 study in the USA, where instead of prescribing Methyldopa, doctors prescribed nifedipine, oral hydralazine, and labetalol orally and injection (Cleary *et al*., 2018)

Most of the antibiotics prescribed in this study are external drug preparations with a generic name: gentamicin cream, which is commonly used in wounds on the skin after cesarean section. Clindamycin, cefixime and metronidazole are antibiotics that are widely prescribed orally. All of them are commonly prescribed for bacterial vaginosis infection in pregnancy (*Drugs in Pregnancy - Gynecology and Obstetrics*, n.d.)

Conclusion

It is recommended that more generic drugs are prescribed, and the management of drug procurement should be improved so that all prescribed drugs are affordable and available when the patients need them so that patients' dissatisfaction can be minimised.

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